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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,436	03/31/2004	Kirti Srivastava	GRT/4062-117	3805

23117 7590 10/01/2007  
NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER
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DESTA, ELIAS

ART UNIT	PAPER NUMBER
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2857

MAIL DATE	DELIVERY MODE
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10/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/813,436

Applicant(s)

SRIVASTAVA ET AL.

Examiner

Elias Desta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### *Detailed Action*

#### *Response to Amendment*

1. Applicant's arguments (see remarks, filed 6/25/2007) with respect to the rejection of claims 1-10 under 35 U.S.C. 101 has been fully considered and is persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of U.S. Patent 7,130,758.

#### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-10 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 7,130,758. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

In reference to claims 1 and 6: a process for creating an analytical closed form model of the earth's surface area heat flow and its error bounds by stochastic analysis so that the model can be used [for evaluation]. Claim 1 of U.S. Patent 7,130,758 is a method for obtaining closed form expression for surface temperature depth distribution along with error bounds. The heat flow in claim 1 of the instant application is equivalent to the surface temperature depth distribution noted in claim 1 of U.S. Patent 7,130,758. In claim 1 of the instant application, inputting values to a computer representing random thermal conductivity is equivalent to having or "incorporating random thermal conductivity" in claim 1 of U.S. Patent 7,130,758. Exponentially decreasing heat source and associated boundary conditions in claim 1 of the instant application are actually

governed by equation 1 of  $\frac{d}{dz} \left\{ \bar{K} + K'(z) \frac{dT}{dz} \right\} = A(z)$  where  $A(z)$  is radiogenic heat source

which is exponentially decreasing heat source and associated boundary conditions and the expression in  $\{ \}$  represents thermal conductivity as well as an expression that associates boundary conditions to device a stochastic solution to the temperature field (see claim 1 of U.S. Patent 7,130,758). The solution to the differential equation (the stochastic heat conduction equation, as expressed in claim 1 of the instant application or noted in claim 1 of U.S. Patent 7,130,758) is found using a series expansion or other method would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter

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pertains because both the instant claim 1 and claim 1 of U.S. Patent 7,130,758 includes outputting a solution to find a mean and variance in temperature fields.

Claims 2 and 3 of the instant application are anticipated by claim 1 of U.S. Patent 7,130,758.  $\left\{ \bar{K} + K'(z) \frac{dT}{dz} \right\}$ : In the equation  $K(z)$  is substituted for  $\bar{K} + K'(z)$ .

Claims 4 and 9 of the instant application are anticipated by claim 1 of U.S. Patent 7,130,758 considering heat flow fields are equivalent to variance in temperature fields.

Claims 5 and 10 of the instant application are anticipated by claim 1 of U.S. Patent 7,130,758 since the equation noted in the claim provides expression for heat flow and the mean is simply the expectation (another term used in stochastic expressions).

Claim 7 of the instant application is equivalent to claim 3 of U.S. Patent 7,130,758.

Claim 8 of the instant application is anticipated by claim 1 of U.S. Patent 7,130,758. As noted earlier the equation  $-A(z) = \left\{ \bar{K} + K'(z) \frac{dT}{dz} \right\}$ : In the equation  $K(z)$  is substituted for  $\bar{K} + K'(z)$ .

### Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Fri (10:30-7:00).

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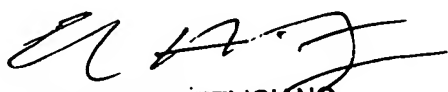
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Elias Desta  
Examiner  
Art Unit 2857

- E.D.

- September 11, 2007

  
ELISEO RAMOS-FELICIANO  
SUPERVISORY PATENT EXAMINER